On convergence almost everywhere of multiple Fourier integrals

ABSTRACT

In this paper we investigate the principle of the generalised localisation for spectral expansions of the polyharmonic operator, which coincides with the multiple Fourier integrals summed over the domains corresponding to the surface levels of the polyharmonic polynomials. It is proved that the partial sums of the multiple Fourier integrals of a function f ∈ L2(RN) converge to zero almost-everywhere on RN \ sup f.

Keyword: Fourier integrals; Spectral expansions; Maximal operators